

WHAT IS CLAIMED IS:

1. A composition comprising TGase I and a synthetic lipid vesicle.
2. The composition of Claim 1, further comprising a glutamine rich substrate.
3. The composition of Claim 2, wherein said substrate is an involucrin.
4. The composition of any of Claims 1 or 3 further comprising a delivery agent selected from the group consisting of trichohyalin, elafin, repetin, periplakin, desmoplakin, envoplakin, keratin intermediate filaments, members of the small proline rich family, cystatin  $\alpha$ , loricrin, fatty aldehyde dehydrogenase, cholesterol sulfatase, and extracellular matrix proteins, pigments.
5. A composition comprising a synthetic ceramide analog of the formula: 16-(16-hydroxyhexadecyl)oxyhexadecanoic acid.
6. The composition of Claim 1, wherein said synthetic lipid vesicle comprises a synthetic ceramide analog of the formula: 16-(16-hydroxyhexadecyl)oxyhexadecanoic acid.
7. A method of joining an involucrin to a synthetic lipid vesicle (SLV) comprising:
  - providing an SLV in a reaction vessel;
  - raising the concentration of  $\text{Ca}^{++}$  in said reaction vessel to at least  $5 \mu\text{M}$ ; and
  - contacting said SLV with an involucrin to join said involucrin to said SLV.
8. The method of Claim 7, further comprising adding a TGase 1 to said SLV.
9. The method of Claim 7 or 8, further comprising adding an omega-hydroxyceramide to said SLV under conditions that permit the formation of an ester bond between said omega-hydroxyceramide and said involucrin.
10. The method of Claim 9, wherein said omega-hydroxyceramide is a synthetic ceramide analog of the formula: 16-(16-hydroxyhexadecyl)oxyhexadecanoic acid.
11. A method of joining a TGase I to an SLV comprising adding solubilized recombinant TGase I to said SLV.
12. A method of joining a synthetic ceramide analog of the formula: 16-(16-hydroxyhexadecyl)oxyhexadecanoic acid to an SLV comprising loading an SLV with a

synthetic ceramide analog of the formula: 16-(16-hydroxyhexadecyl)oxyhexadecanoic acid.

13. A method of improving lipid barrier function in the skin comprising: administering the composition of any of Claims 1-6 to the skin.

5 14. A method of ameliorating an autosomal recessive ichthyoses (ARI) disease comprising: administering the composition of any of Claims 1-6 to a subject with ARI skin.